

R. G. CLYNE.
PAPER SHOT SHELL.
APPLICATION FILED JAN. 28, 1911.

1,006,828.

Patented Oct. 24, 1911.

Fig. 1.

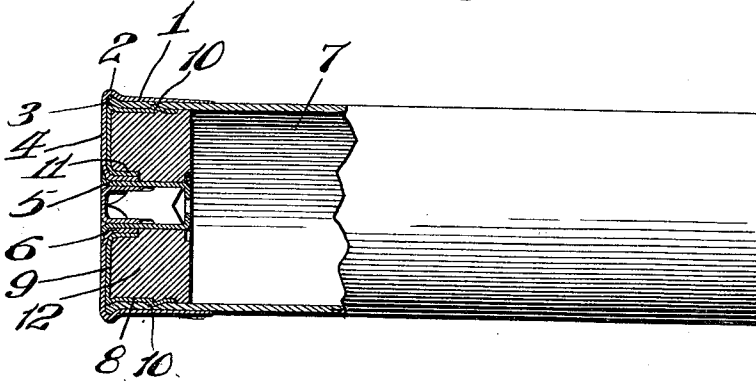


Fig. 2.

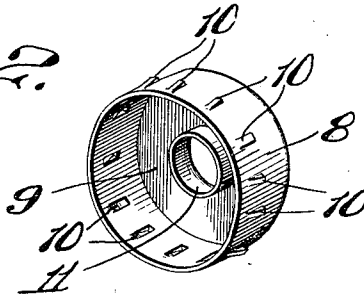


Fig. 3.

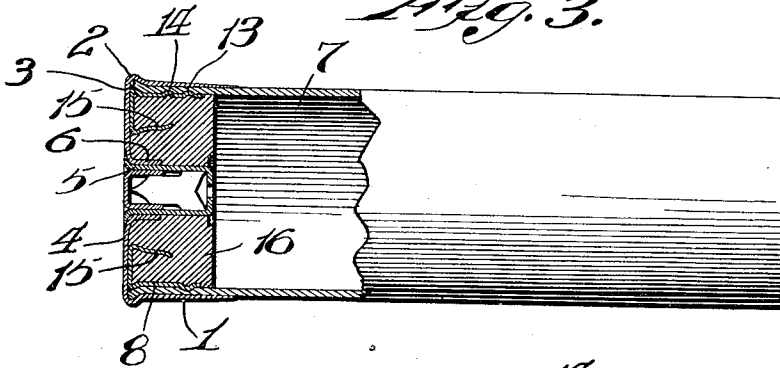
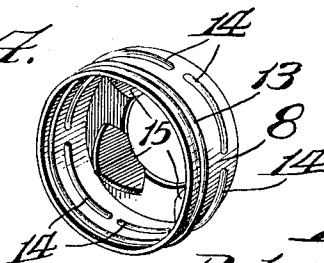


Fig. 4.



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UNITED STATES PATENT OFFICE.

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PAPER SHOT-SHELL.

1,006,828.

Specification of Letters Patent.

Patented Oct. 24, 1911.

Application filed January 28, 1911. Serial No. 605,164.

To all whom it may concern:

Be it known that I, ROBERT G. CLYNE, a subject of the King of Great Britain, residing at Upper Alton, in the county of Madison and State of Illinois, have invented certain new and useful Improvements in Paper Shot-Shells, of which the following is a specification.

This invention relates to that class of cartridges commonly termed paper shot shells and has for its primary object to provide improved means for locking the shell to the cap, and for reinforcing the cap end of the cartridge.

A further object is to provide improved means for anchoring the base wad within the cap.

More specifically the main general object of the present invention is to provide an improved locking reinforce for paper shot shells of the character shown and described in my co-pending application, Serial No. 600,675, filed January 3, 1911.

Another object is to provide an improved device of that character in which the inner end of the paper shell of a shot cartridge is interposed between the cylindrical wall of the cap and a corresponding cylindrical wall of a reinforce within the cap, said device being adapted to inseparably secure the shell to the cap and to provide a gas-tight joint therebetween.

Another object is to provide an improved locking reinforce of the character referred to by means of which cartridge shells embodying such reinforces can be economically constructed and readily assembled during their manufacture.

Other and further objects will appear in the specification and be specifically pointed out in the appended claims, reference being had to the accompanying drawings exemplifying the invention and in which,

Figure 1 is a side elevation of a cartridge shell embodying my improvements, the cap end thereof being broken away and shown in section. Fig. 2 is a perspective view of the locking reinforce detached. Fig. 3 is a side elevation of another shell provided with a modified form of the locking reinforce, the cap end of the shell being broken away, as in Fig. 1. Fig. 4 is a perspective view of

the locking reinforce shown in this embodiment.

Referring first to the embodiment shown in Figs. 1 and 2, the head or base cap 1 is constructed in the usual manner with the peripheral flange 2 hollowed interiorly to provide a circular recess 3 and has its end wall 4 punched in at its center to provide the usual aperture for the reception of a battery cup 5. The metal stamped from the end wall of the cap in forming the central battery cup aperture, forms a collar 6 within which the battery cup is seated. A paper shell 7 with one end inserted into the base cap 1, is securely locked to said base cap by a locking reinforce or anchor constructed preferably of sheet metal which is stamped in proper size and form to provide a cylindrical wall 8 and a flat end wall 9, said end wall being apertured at the center to correspond with the battery cup. The cylindrical wall 8 of the reinforce or anchor is provided with protuberant portions, preferably in the form of a plurality of outwardly projecting points 10 made by indenting said cylindrical wall 8 on the inner surface thereof. In consequence, when the several parts are assembled, said points 10 project into one end of the paper shell and clamp it against the cylindrical wall of the cap, the end of said shell being expanded into the recess formed within the flange 2 of the cap.

As shown in Fig. 1, the reinforce or anchor abuts directly against the flat wall of the cap and is provided with an inwardly turned flange 11 fitting snugly about the collar 6 which holds the percussion cup. Seated within the reinforce is a base wad 12, which is compressed therein in such a way as to cause portions to become embedded within the depressions or indentations within the cylindrical wall 8 of the reinforce. Said wad is made sufficiently thick so as to entirely cover up the cylindrical wall of the reinforce, thus placing it entirely out of the reach of the powder within the powder holding space. By this means, sheet metal of any description, even though subject to rust, may be employed without deterioration of the powder which might be caused by the oxidized metal.

Referring now to the embodiment shown

in Figs. 3 and 4, the construction of the base cap or head of the cartridge is exactly similar to that shown and described in connection with Figs. 1 and 2. In this embodiment, however, the reinforce or anchor is provided on its cylindrical wall with locking projections in the form of a raised protuberance 13 extending entirely around the periphery of the cylindrical wall of the reinforce and a plurality of circumferentially arranged protuberances 14 spaced apart and arranged substantially parallel to the protuberance 13. The flat end wall of the reinforce or anchor, has the metal thereof stamped and punched in such a way as to provide an enlarged opening concentric with the percussion cup aperture in the base cap, the metal displaced from said flat end wall forming a number of circularly bent inwardly projecting wings or projections 15, pointed at their extremities and enlarged intermediately of their pointed ends and the flat end wall of the reinforce. By this means, when the wad 16 is forced into position, the wings 15 are adapted to pass between adjacent layers of the wad and after the wad has been compressed within the reinforce, the layers are caused to flow transversely and to become locked under the enlarged portions of the wings 15. Furthermore, when the wad is compressed home, the metal of the wings becomes kinked or buckled, as shown in Fig. 3, thus providing additional interlocking connection between the wings and the base wad, and this connection cooperates with the recesses formed in the cylindrical wall of the anchor to lock the base wad to said anchor.

The advantages of the herein disclosed construction and arrangement of parts will now be understood, and briefly stated reside in or are connected with the following features: The inner expanded end of the paper shell is compressed within the recess 3 of the cap and is rigidly maintained in position by the circular corner of the locking reinforce or anchor which is sustained by the flat end wall of said anchor abutting directly against the inner face of the flat end wall 4 of the cap. To further clamp the paper shell in position, the cylindrical wall of the reinforce, which itself fits snugly to the inner face of the shell, is provided with the outwardly projecting points 10 (or protuberances 15). In connection with the embodiment shown in Figs. 3 and 4, the base wad is anchored to the reinforce and within the base cap by reasons of its interlocking connections with the depressions formed in the cylindrical wall of the reinforce and by reason of the locking engagement with the wings 15. A further feature resides in making the base wad of sufficient thickness to entirely cover and inclose the locking reinforce so that said reinforce can be construct-

ed of relatively inexpensive sheet metal which is subject to rusting, the base wad making it impossible for any deterioration of the powder to take place through oxidation.

What I claim is:

1. A locking reinforce for cartridges comprising a cylindrical wall provided with recesses in the inner face thereof for the reception of protuberant portions of a base wad, and a flat end wall provided with projections adapted to be embedded in said base wad.

2. A locking reinforce for cartridges comprising an outer cylindrical wall having indentations in the inner face forming protuberances on the outer face thereof, and an end wall provided with projections enlarged inwardly, said projections and indentations being adapted to provide interlocking connections between the base wad and reinforce.

3. A locking reinforce for cartridges constructed of an integral sheet of metal and comprising a cylindrical wall provided with outwardly projecting points and indentations in the inner face of said wall, and a plurality of anchoring wings projecting inwardly opposite to said indentations.

4. In a cartridge, the combination with a head cap and a battery cup, of a base wad, and a locking reinforce provided with projections embedded within said base wad about said battery cup and with interlocking connections with the periphery of said base wad.

5. In a cartridge, the combination with a head cap and a battery cup, of a base wad surrounding said battery cup, and a locking reinforce provided with interlocking connections about the periphery of said wad and having portions embedded within said base wad around said battery cup.

6. In a cartridge, the combination with a head cap recessed around the periphery of its cylindrical wall to form a flange, of a tubular shell having one end expanded within said recess, a locking reinforce abutting against the flat end wall of the cap and holding the expanded end of said tubular shell within said recess, and a base wad compressed within said reinforce, said base wad being provided with interlocking connections with said reinforce other than that at the base flange.

7. In a cartridge, the combination with a head cap provided with a flange forming a recess interiorly, of a tubular shell having one end expanded within said recess, a locking reinforce having a cylindrical wall fitting an inner wall of said shell and a flat end wall abutting against the end wall of said cap, the cylindrical wall of said reinforce being stamped to provide hollow projections engaging said tubular shell at points other than around the base flange recess, and

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a base wad compressed within said reinforce and interlocking with the hollow depressions formed within the cylindrical wall of said reinforce.

5 8. In a cartridge, the combination with a head cap having a flange and an interior recess formed within said flange, of a tubular shell having its inner end expanded within said recess, a locking reinforce comprising a
10 flat end wall abutting against the end of said cap and provided with projections formed thereon, and a cylindrical wall extending around and in close contact with said tubular shell, said wall being provided
15 with projections engaging said shell, and a base wad compressed within said reinforce

and interlocking with the projections formed in the end wall thereof.

9. In a cartridge, the combination with a cap having a flange with an interior recess, 20 a tubular shell having one end expanded within said recess, a reinforce stamped from an integral sheet of metal and having a shell abutting against the wall of said tubular shell to lock its inner end within the recess, 25 and a base wad compressed within said reinforce, said base wad extending beyond and entirely covering said reinforce.

ROBERT G. CLYNE.

In the presence of—

HARRY W. KINNON,
L. P. GLEIBER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."